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## Covid-19: Four in 10 cases in Italian town that locked down early were asymptomatic

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Mass testing and quarantining in the small Italian town of Vo'—which experienced the first known covid-19 death in the country—enabled the community to suppress the virus in just a few weeks, according to researchers.<sup>1</sup>

The town went into quarantine immediately after the first death on 21 February, during which time most of the 3275 residents were tested (86% were tested at the start, 72% two weeks later).

Results showed that at the beginning of the lockdown 2.6% of residents tested (73 of 2812, 95% confidence interval 2.1% to 3.3%) were positive for SARS-CoV-2. Two weeks later the proportion who tested positive more than halved to 1.2% (29 of 2343, 0.8% to 1.8%). Across the entire time studied, around 40% of those who tested positive were asymptomatic (39.7% at the start, 44.8% after two weeks).

The researchers from the University of Padova, Italy, and Imperial College London, UK, have published the findings in *Nature*. They reported that locking down the area and implementing a test and trace system “substantially reduced transmission, with the reproduction number dropping from an initial value of 2.49 (1.31 to 4.00) before the lockdown to 0.41 (0.21 to 0.63) after the lockdown.”

The team also carried out modelling to estimate what transmission would have been in the absence of lockdown. “The model suggests that on average up to 86.2% (range 82.2% to 91.6%) of the population would have been infected in the absence of interventions and that with the lockdown, 4.9% (range 2.9% to 8.1%) of the population of Vo' was infected by SARS-CoV-2.”

The authors concluded, “This testing and tracing approach has had a tremendous impact on the course of the epidemic in Veneto compared to other Italian regions . . . Enhanced community surveillance, the early detection of SARS-CoV-2 transmission, and the timely implementation of interventions are key to control covid-19 and reduce its substantial public health, economic, and societal burden worldwide.”

Italy has had more than 240 000 covid-19 cases as of 30 June, with around 35 000 deaths.

Co-lead researcher Ilaria Dorigatti, from the MRC Centre for Global Infectious Disease Analysis at Imperial College London, said, “The Vo' study demonstrates that the early identification of infection clusters and the timely isolation of symptomatic as well as asymptomatic infections can suppress transmission and curb an epidemic in its early phase. This is particularly relevant today, given the current risk of new infection clusters and of a second wave of transmission.”

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1 Lavezzo E, Franchin E, Ciavarella C, et al. Imperial College COVID-19 Response Team. Suppression of a SARS-CoV-2 outbreak in the Italian municipality of Vo'. *Nature* 2020;30. doi: 10.1038/s41586-020-2488-1 pmid: 32604404

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